GEOGRAPHIC NEWS BULLETINS

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Photograph by Gelasio Caetani

HAILING ITALY'S NEWEST PROVINCE

So successful has been Premier Mussolini's program to drain and populate the once malarial Pontine Marshes near Rome that the region has been granted local government as Littoria Province. The sign reads: "Littoria, Sabaudia—This Is the War We Prefer" (see Bulletin No. 5).

HOW TEACHERS MAY OBTAIN THE BULLETINS

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The Eyes of Europe Are on the Saar

NEXT Sunday the people of the Saar, a little patch of Europe between France and Germany that is not quite as large as our State of Rhode Island, will go to the polls and vote. It will be one of the strangest elections on record, for the populace will be called upon to express its choice by ballot between remaining under the League of Nations, rejoining Germany, or becoming a part of France.

An international police force, composed of troops from England, Italy, Sweden, and the Netherlands, will supervise the plebiscite.

What the Saar lacks in actual size is more than outbalanced by its wealth of raw materials and busy industries. The Saar has one of the most valuable coal deposits in Europe, and its mills and factories annually turn out thousands of dollars worth of steel, iron, coke, glass, chemicals, and pottery.

Mines Destroyed in World War

Coal mines, in fact, are directly responsible for fifteen years of government as a ward of the League of Nations—and the balloting next Sunday. Shafts and tunnels of hundreds of costly mines in adjacent French coal areas were practically destroyed by retreating German troops during the latter part of the World War.

Although the mines were recaptured by France before the end of the War, many of them proved to be nearly valueless.

Because most of the people of the Saar are German, trouble might have followed if the district had been turned over to France. But diplomats felt that France should get some repayment for her own crippled mines, and furthermore that there should be no tariff restrictions against importing coal into France. As a result coal-digging rights in the Saar were assigned to France for 15 years, from 1920 to 1935, and the League of Nations was empowered to set up a unique district, to be neither annexed territory, independent state, nor mandate.

The region carved out along the Franco-German border, including not only all mines under operation before the War, but also entire coal fields, embraced a large part of the basin drained by the winding River Saar, hence the name adopted for the new entity. Much of the territory lies north and east of the Saar River, but it also takes in a long, narrow strip on the opposite bank. To the south lies Lorraine (whose iron deposits and mills need Saar coal), and to the north the Rhine provinces of Germany. The northwest corner of the Saar does not quite reach Luxembourg.

Vineyards and Forests on Hills

The Valley of the Saar is fairly wide between Saarbrücken, the capital and chief city of the district (see illustration, next page), and Merzig, near which point it flows into the Rhine provinces. The picturesque hills that rise above the stream are covered with patches of forest, farms, and vineyards, but lumbering, farming and the production of wine are relatively unimportant compared with mining and manufacturing.

Although the Saar has been politically a sort of twilight zone between France and Germany for centuries, its 820,000 population to-day is largely German-speaking and of German descent. Signs and notices are in German, except for French inscriptions over the offices of the coal mines. German customs and traditions are maintained.

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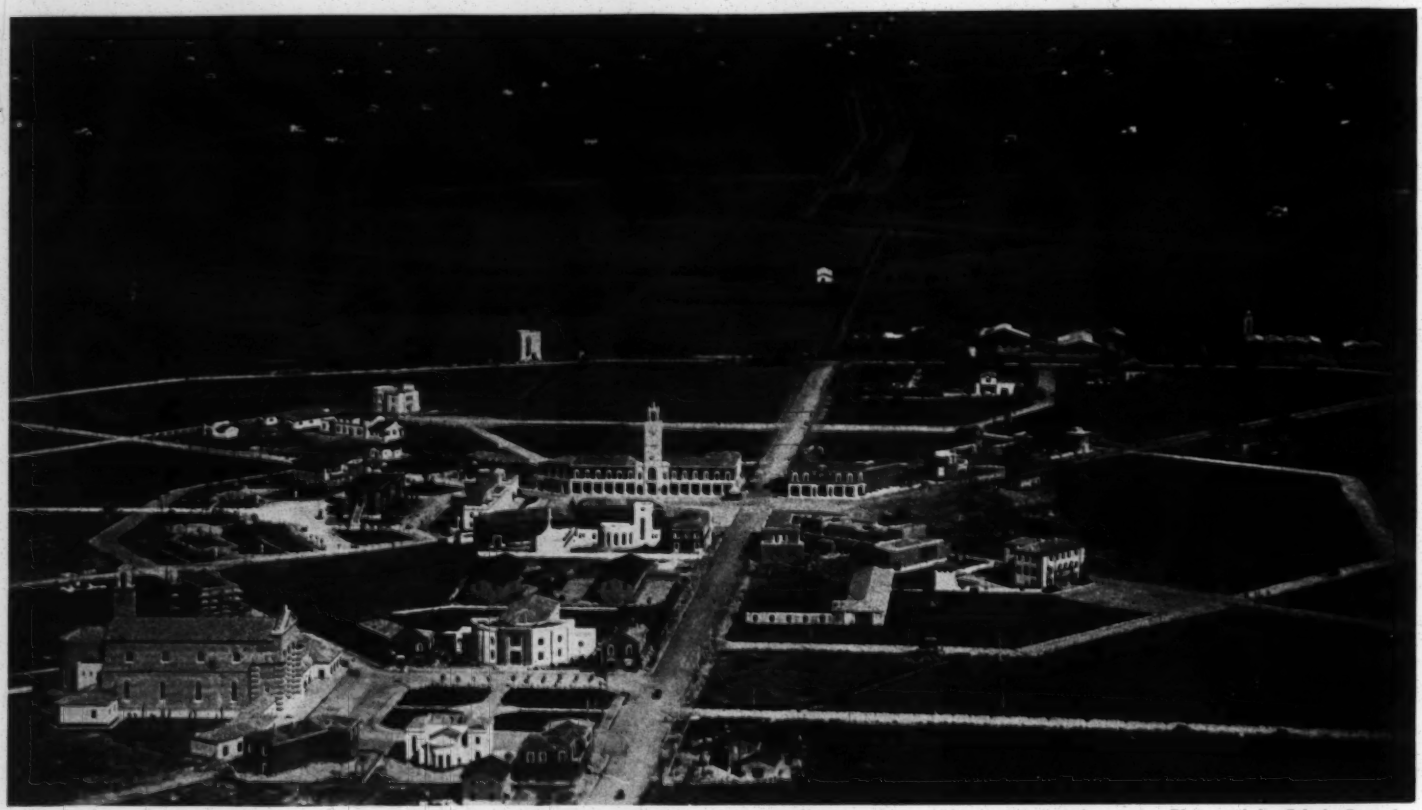

Photograph by Gelasio Caetani

A BRIGHT NEW CITY RISES FROM THE ONCE DREAD PONTINE MARSHES

Two and a half years ago wild boars roamed through the broom thickets where Littoria stands amidst pleasant fields dotted with new farmhouses (see Bulletin No. 5).

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To Repeat Stratosphere Flight from Black Hills

ANOTHER expedition into the stratosphere early next summer in a balloon of three million or more cubic-feet capacity, under the joint auspices of the National Geographic Society, and the U. S. Army Air Corps, is announced by Dr. Gilbert Grosvenor, President of the National Geographic Society.

As in the case of the expedition last summer, in the *Explorer,* the National Geographic Society will assume the major portion of the expenses and will manage the details of the project, while the Army Air Corps, with the full approval of the War Department, will supply the flying officers and direct the flight.

Captain Albert W. Stevens, scientific observer and crack aerial photographer, will be in command of the balloon, which will be piloted by Captain Orvil A. Anderson. Both officers made the flight of last July to an altitude of 11¾ miles above sea level.

Major Kepner Unable To Join Crew

Major William E. Kepner, who commanded the 1934 flight and who, with Captain Stevens and Captain Anderson, stuck to the disabled *Explorer* until after it exploded over Nebraska, will be unable to take part in the new expedition because of the continued assignment of important duties in the Army Air Corps.

First Lieutenant Randolph P. Williams, Langley Field, Virginia, will probably be assigned to have charge of ground operations for the flight.

"The decision again to send observers and scientific instruments into the stratosphere by means of a large balloon," says Dr. Grosvenor's statement, "was reached after careful consideration by the Board of Trustees and Officers of The Society and the Advisory Board of Scientists who assisted in last summer's flight. This decision was concurred in by the War Department as to the Air Corps' participation.

"In arriving at this decision the officials had before them data showing increasing salvage of the automatic records made during the 1934 flight (see illustration following Bulletin No. 3), and a report from a special committee clarifying the problem of the torn bottom fabric of the *Explorer,* and outlining methods for preventing a repetition of the accident.

Why the Balloon Was Torn

"It was found after careful examination and tests by the special committee, working with the assistance of the U. S. Bureau of Standards, that the tear in the under fabric of the *Explorer* resulted from a sticking of that fabric when it was folded partly up into the main bag of the balloon.

"The committee is of the opinion that the accident to the *Explorer,* as much as it is to be regretted, has made possible the solving of problems in the handling of large balloons that will be of great value in all future flights. In the National Geographic Society-U. S. Army Air Corps Flight of 1935 full advantage will be taken of the lessons learned during the previous flight.

"A continuation of the explorations in the high regions of the atmosphere is considered important and desirable to check and test data already obtained, to make additional photographic studies, to bring back samples of stratosphere air, and to make certain other new scientific studies. The expedition will place special emphasis on data that can be obtained only from a manned balloon, capable of lifting standard laboratory instruments."

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Densely Populated

Over half the people profess the Roman Catholic faith. With a population of more than 1,000 persons per square mile, the Saar to-day is the most densely populated area in Europe.

Note: The *National Geographic Magazine* will publish a completely illustrated article about the Saar in the February, 1935, issue. For supplementary reading about adjacent parts of Germany see: "Freiburg—Gateway to the Black Forest," *National Geographic Magazine*, August, 1933; "Dinkelsbühl, Romantic Vision from the Past," December, 1931; "Renascent Germany" and "Medieval Pageantry in Modern Nördlingen," December, 1928; "Rothenburg, the City Time Forgot," February, 1926; "Rediscovering the Rhine," July, 1925; and "The Story of the Ruhr," May, 1922.

Bulletin No. 1, January 7, 1935.

Photograph from Wide World

TOWN HALL OF THE SAAR'S CAPITAL

As in German cities, the seat of local government at Saarbrücken is known as the *Rathaus*. Typically German are its ornate pinnacles, tall clock tower, and the busy restaurant in its basement.

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Vichy, the "Saratoga Springs" of France

FRANCE, too, is turning toward streamline, motor units on its railways. A test run of a modern high-speed train between Paris and Vichy recently brought the capital of France and the nation's chief watering place within four hours of each other.

The new service is of importance to more than tourists and invalids. Vichy has often been suggested as a "war capital" of France, because it is situated in almost the exact center of the country and is enveloped by many square miles of rugged hills and dense forests which might easily confuse bombing parties of enemy planes.

Vichy's name is not an unfamiliar one, even outside the boundaries of France. As the principal spa, or watering place, of France it is annually a mecca for thousands of visitors; some of whom come to "take the cure" and others simply to enjoy the concerts given in its beautiful Casino, or to stroll through the gardens and parks that curve along the right bank of the River Allier. Except for a small old quarter, the town is distinctly modern.

Exports Millions of Bottles of Mineral Waters

From fourteen springs, eight of which are State property, flows the chief asset of the city—"Vichy Water." One of these, the famous Source de Célestins, produces the strongly alkaline water which is bottled and shipped to the drug stores and hospitals of the world for the treatment of various stomachic and intestinal disorders. More than 50 million bottles are exported each year

The curative powers of the springs of Vichy, however, are not limited to those derived from internal use. Many invalids come to Vichy to bathe in great thermal establishments.

In recent years the city has experienced a mild building "boom" with several important changes being made in its bathing places. The old second and third-class bath building has been torn down and replaced by a park.

North of the first class bathing house (a huge edifice in the Moorish style), a handsome new building of modernist architecture has been erected on a triangular plot of ground. This establishment, the Baths Callou, is to meet the needs for cheaper, or second-class baths, but it also contains some first-class rooms with every device used in modern therapeutics. This building is open throughout the year to visitors from many parts of Europe.

Water Contains Soda and Iron

Some of the springs of Vichy must be pumped, but several of them bubble up naturally. The Source Lucas, one of the most abundant, forces 1,760 gallons of water an hour to the surface. The waters of the Vichy springs contain chiefly soda and iron, and, while a great deal of the water is used for drinking, more than 3,500 baths are taken daily by visitors during the height of the season, which extends from July first to September fifteenth.

Some of the waters are pleasant to drink, but strangers are advised to use them with caution.

One of the features of the city is the triangular park between the Drink-Hall and the Casino. On two sides it is bordered by a covered gallery, used by walkers in rainy weather, and on the third side by the Casino and Theater. "Drink and

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The flight of next summer will be made from the same place as that of 1934, a protected basin in the Black Hills, 12 miles southwest of Rapid City, South Dakota. The equipment for the flight will be made available at an earlier date than last year, and, it is hoped, the ascent will be made during the early part of June.

Note: Students interested in this new field for exploration should also consult: "Exploring in the Stratosphere," *National Geographic Magazine*," October, 1934; "World's Largest Free Balloon to Explore Stratosphere," July, 1934; "The Geographic's Stratosphere Expedition," April, 1934; "Ballooning in the Stratosphere," March, 1933; "Black Hills (South Dakota), Once Hunting Grounds of the Red Men," September, 1927; and "Exploring the Earth's Stratosphere," December, 1926.

See also in the GEOGRAPHIC NEWS BULLETINS: "Stratosphere Flight Yields Valuable Data," week of October 1, 1934; "Biggest Stratosphere Balloon Taking Shape in Akron," week of April 30, 1934; and "The Black Hills, Scene of Big Indian Powwow," week of April 9, 1934.

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BALLOON INFLATORS MUST WORK AT NIGHT

The three million cubic foot National Geographic Society-U. S. Army Air Corps Stratosphere balloon, *Explorer*, tugging at its bonds in a valley of the Black Hills, in South Dakota. So that the huge balloon would be ready to rise at sun-up, July 28, 1934, it was necessary to begin piping hydrogen into it at 8 o'clock the preceding evening.

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"How Long Will Niagara Falls Last?"

WHEN a two-hundred-ton "chip" broke away from the rocky face of Horseshoe Falls, at Niagara, and plunged into the mist-filled gorge with a resounding crash last month, again the question was asked: "How long will Niagara Falls last?"

The recent slide did not change the contour of the famous Canadian side of the big cataract, but in 1931 a crash of rock left a break in the top edge, and geologists were pressed for an opinion on Niagara's probable life span. When the falls nearly "ran dry" back in 1848, the same query was put.

Niagara started to spill water over a cliff about 30,000 years ago, and seven miles farther down the Niagara River than the present falls. If the falls are permitted to wear away, and continue to do so at their present rate (about four feet annually), they will tear down the remaining 16 miles of the river between the falls and Lake Erie some time about the year 23,053 A. D.

Fed by a Million Springs

Each year more than 2,000,000 visitors from all over the world view the avalanche of waters spilling from the falls' crest to the foamy, bubbling pool at its feet. On the lips of nearly every observer is the query: "Where does all the water come from?"

"From a huge basin nearly as large in area as the State of Texas—four of the five Great Lakes," answer geographers and hydraulic engineers.

A million springs replenish the basin which holds captive nearly half the fresh water in the world. As the vast basin of Lake Superior fills and overflows, the waters descend and mingle with those of Lakes Huron and Michigan, and the three pour the combined flood of their overflow into Lake Erie.

Surplus water from the four lakes, seeking an outlet to the sea, breaks through a notch in the east rim of Erie's basin, making the Niagara River. Shortly before the Niagara River reaches the steep cliff over which it hurls its waters, Goat Island separates the stream into two channels.

About six per cent of the water passes to the right over the American Falls in a symmetrical sheet more than 1,000 feet wide, and the remaining 94 per cent passes to the left, over the curving 3,000-foot Canadian or Horseshoe Falls (see illustration, next page).

Man Has Put Falls to Work

Without destroying its scenic beauty, man has put Niagara to work. By treaty, Canada and the United States agreed on the amount of water each may divert for the generation of electric power—36,000 cubic feet a second by Canada, 20,000 by the United States.

To-day Niagara supplies light and power to cities and towns within a radius of more than 200 miles.

Perhaps the average visitor, delighting in the beauty of the falls, is unaware that it was drafted for service in the World War. It performed its service well, and both before and since has played a leading rôle in the American industrial world.

When importation of grinding materials from Asia Minor ceased during the

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Walk" is the fashion here among those "taking the cure." It is a common sight to see old gentlemen, tin cups in hand, pacing around the gallery with an occasional stop to gulp a little of the salty water.

New Park Along River

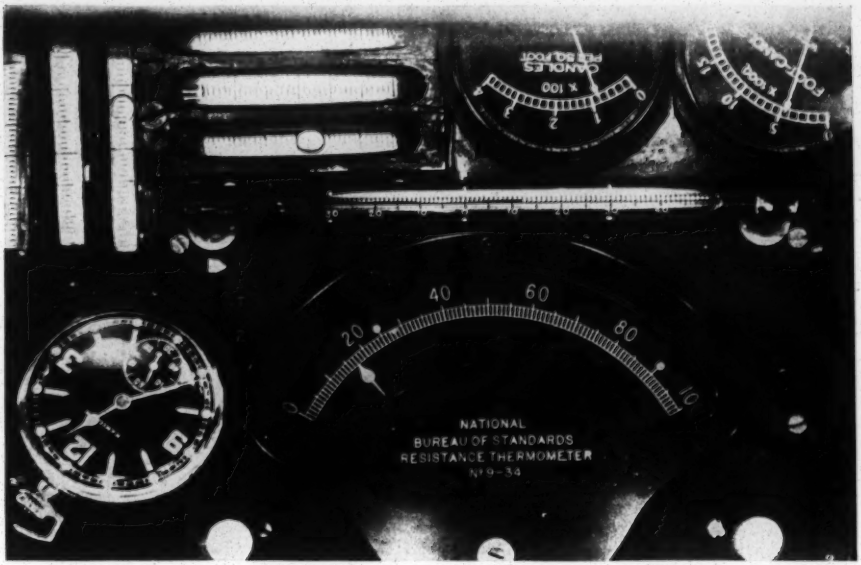
The New Park along the riverfront is another favored promenade. It extends almost the whole length of the town, and, like Washington's Potomac Park, was built from swampy land once overflowed by the river.

Although the city's permanent population is only 17,000, it has more than 160 hotels and rooming houses. Its famous springs were known to the Romans, who named the place *Aquae Calidae*.

But it did not become a popular resort for invalids and society in general until the Second Empire, in the middle of the last century. Napoleon III had a villa at Vichy which he visited several times.

Note: For other French references see: "Our National War Memorials in Europe," *National Geographic Magazine*, January, 1934; "Maid of France Rides By," November, 1932; "Chateau Land—France's Pageant on the Loire," October, 1930; "Armistice Day and the American Battle Fields," November, 1929; "St. Malo, Ancient City of Corsairs," August, 1929; "Across the Midi in a Canoe" and "In Smiling Alsace, Where France Has Resumed Sway," August, 1927; "Carnival Days on the Riviera," October, 1926; "Flashes of Color Throughout France," November, 1924; and "Through the Back Doors of France," July, 1921.

Bulletin No. 3, January 7, 1935.



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WHY STRATOSPHERE BALLOONS ARE SENT UP

A snap of the camera every minute and a half "read" these instruments, recording valuable scientific facts as the National Geographic Society-U. S. Army Air Corps balloon *Explorer* soared in the stratosphere last July. Two other cameras read other instruments. This picture, salvaged from the wreck of the balloon, shows: the tilt of the gondola (bubble-levels, upper left); sky brightness (to the right); sun brightness (upper right); temperature inside gondola (long narrow tube); time; and temperature outside. An interpretation of the latter reveals an outside temperature of 70.1 degrees below zero Fahrenheit (see Bulletin No. 2).

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Littoria, Italy's 93rd Province

ITALY has a new province (a political subdivision within the country somewhat similar to England's "county" or "shire"). Premier Benito Mussolini last month dedicated the 93rd Italian province—Littoria—a fertile farm area recently reclaimed from the once desolate and malarial Pontine Marshes southeast of Rome. On the following day Il Duce laid the first stone for the new city of Pontinia in the area.

The drab swampland of a short time ago has become a pleasant region of golden fields, vegetable gardens, sparkling canals, and budding orchards.

In modern farmhouses along improved motor highways, and in several landscaped new cities and villages, dwell more than 60,000 former service men and their families.

Where Wild Boars Roamed in Broom Thickets

A little over two years ago Premier Benito Mussolini gave orders that the stagnant waters of the Pontine Marshes should be drained off to the sea, malaria should be ended, 4,000 farmhouses built and populated with as many peasant families drawn from the crowded farming provinces of the north, and that three cities —Littoria, Sabaudia, and Pontinia—should rise in the deserted land.

The waste and flooded plain at the very doors of Rome was to become a garden and supply part of the food needs of the Italian capital. The order is being carried out as scheduled and the project to-day is reported to be in first-class shape (see map, next page).

Where two and a half years ago wild boars roamed in the broom thickets, you can see the neat little city of Littoria (see illustrations, pages 1 and 2). All the surrounding land is dotted by hundreds of bright, healthful farmhouses, replacing the squalid wooden huts where pigs and chickens once shared the misery of a few marsh dwellers.

Twenty miles to the south, facing the Tyrrhenian Sea (a part of the Mediterranean), is the city of Sabaudia, named in honor of the House of Savoy. This neat little community is growing like a mushroom near a vast forest that will be its natural park. At the foot of the mountains, Pontinia will rise in 1935, recalling the Etruscan population that, 2,500 years ago, first settled and farmed the fertile land.

Many Highways and Canals

This great project would not be possible had there not been much silent preparatory engineering work. Since 1926 a special commission, with Senator Natal Prampolini at the head, has been working steadily. More than 160 miles of highway have been laid, 300 miles of canals dug, and five villages built in the marshy desert.

A huge canal, 85 feet wide, gathers flood waters at the foot of the hills, and, skirting the lowland, leads them to the sea, 24 miles away.

America has had a hand in this modern miracle. Through the assistance of the Rockefeller Foundation an organization was set up to fight malaria, because, unless this ancient enemy had been destroyed, it would not have been possible to conquer the land.

When the work was started, statistics showed that 95 per cent of the population

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war, American manufacturers attempted to make their own. Early experiments failed due to a lack of electric current at a price the new venture could afford to pay. Those who backed the process thereupon went to Niagara Falls, set up a plant, and founded the artificial abrasive industry.

Falls Perform Many Duties

How much this industry has meant to America is difficult to overestimate. To take the grinding machinery out of automobile factories, munition plants, locomotive works, car foundries, and machine shops of the country would paralyze the nation's whole industrial system.

In addition Niagara's electricity aids in the manufacture of aluminum, chemicals, wood pulp, paper, and even in the baking of breads.

Note: For other photographs and data about this magnificent natural wonder see: "Around our Inland Seas," *National Geographic Magazine*, April, 1934; "New York—An Empire Within a Republic," November, 1933; "Ontario, Next Door," August, 1932; "Seeing America with Lindbergh," January, 1928; "The World's Great Waterfalls," July, 1926; "Glimpses East and West in America," May, 1924; "Our Heritage of the Fresh Waters," August, 1923; and "The Niagaras of Five Continents," September, 1920.

Bulletin No. 4, January 7, 1935.

Photograph (d) Major Hamilton Maxwell

NIAGARA'S "THUNDERING SMOKE" FROM THE AIR

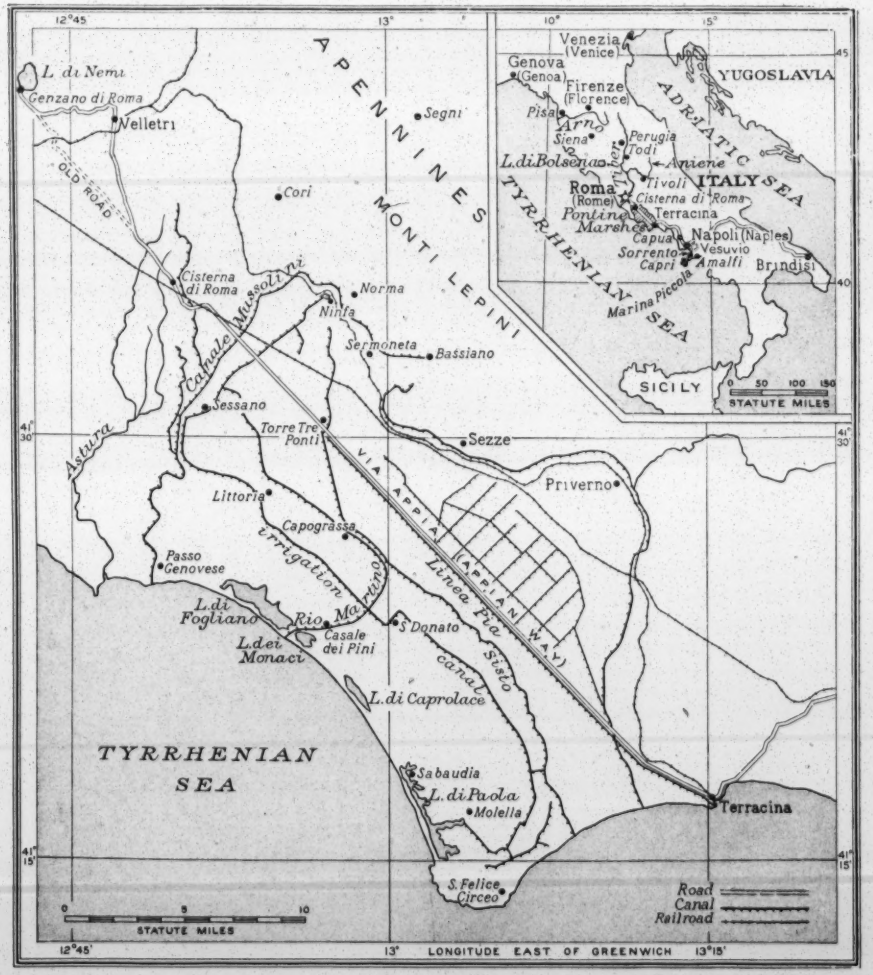
Visitors get a close-up of this view of the Falls while crossing the International Bridge (foreground), which hurdles the Niagara gorge just below the American Falls. In the center background, nearly hidden by mist, is the curving Canadian or Horseshoe Falls, scene of the recent rock slide. The patch of wooded land between them is Goat Island. One of the hydro-electric plants may be seen below and to the right of the Horseshoe Falls, along the Canadian shore.

was infected with the disease and that virtually no infant reached its first year without an attack of fever. Yellow little faces and sunken eyes stared at visitors in the medieval streets.

Now new cases of malaria are nearly unknown, and pink and white cherubs greet one everywhere.

Note: For additional references, historical background, and photographs see: "Redemption of the Pontine Marshes," *National Geographic Magazine*, August, 1934; and "The Story and the Legends of the Pontine Marshes," April, 1924.

Bulletin No. 5, January 7, 1935.



Drawn by A. E. Holdstock

NEW PUBLIC WORKS STRADDLE THE APPIAN WAY

Ancient Rome's "Queen of Roads" runs as straight as a fiddle string through the maze of canals, the new cities, and modern farms of Italy's latest Province, Littoria. The Pontine Marshes, lying in a depression between the Apennines and the sand-hills along the sea, have been a problem since the days of the Caesars, but to-day they promise to become a breadbasket at the very door of Rome.